

1. Device or a method for determining the position and/or the orientation, particularly the direction of vision, of an eye, a starting point or an end point of a light beam reflected by a part of the eye and detected by a detector system and/or of a light beam projected by a projection system onto or into the eye quasi two-dimensionally describes a movement pattern of a scanning and/or projection movement in the eye when the direction of the light beam is changed with respect to the time according to the scanning or projection movement, having a shifting device which causes a reference point of the movement pattern to follow into the pupillary or macula center, and a determination device which uses the movement pattern of the scanning movement or projection movement for determining the pupillary center or the macula center.

2. Device or method according to Claim 1, characterized in that the device is constructed to be wearable (portable), particularly in the form of spectacles.

3. Device or method according to one of the preceding claims, characterized in that the light beam projected into the eye and/or the light beam detected by the detector system is an infrared light beam.

4. Device or method according to one of the preceding claims,

characterized in that the diameter of a light beam projected by a projection system onto the eye is very small compared to a pupil diameter, and the ocular, particularly the retinal reflex of the beam is detected.

5. Device or method according to one of the preceding claims,

characterized in that a splitter mirror is arranged in the light beam, which splitter mirror allows only a small fraction of a light beam projected by a projection system to pass and reflects a correspondingly large fraction of the incident ocular reflex in the direction of the detector system.

6. Device or method according to one of the preceding claims,

characterized in that a projection system projects light in a pixel-type manner with a predefined pixel frequency onto the eye, and in that the projection system modulates the projected light with a frequency that is higher than the pixel frequency.

7. Device or method according to one of the preceding claims,

characterized in that no active illumination of the eye takes place, and that the detector system carries out a pixel-type scanning of the ambient light reflected back from the eye and/or of the light emitted by the eye.

8. Device or method according to one of the preceding claims,

characterized in that a surface that can be positioned in front of the eye has the marker areas and normal areas, that the marker areas reflect an impinging projection

beam originating from the projection system completely back in the direction of the detector system, and that the normal areas guide an impinging projection beam originating from the projection system in the direction of the center of the eye.

9. Device or method according to the invention according to one of the preceding claims, characterized in that the position and/or orientation of the eye with respect to its environment is determined in that the detector system detects the retinal structure of the eye as well as also the environment reflex image superimposed thereon, detects the position of the fovea by means of the retina structure and identifies the area of the environment sighted by the fovea by means of a pattern identification.

10. Device or method according to one of the preceding claims, characterized in that the relative position of at least one characteristic area of the retina with respect to the optical detector and/or projection system is determined, and in that the deviations of determined position data of this characteristic area from previously stored position data of this characteristic area are used for the determination of the spatial position and/or orientation of the eye with respect to the optical detector and/or projection system.

11. Device or method according to one of the preceding claims, characterized in that a representation of at least selected areas of the retina is detected and is filed in an intermediate memory, and in that, for the

determination of a change of the spatial position of the eye, a comparison takes place of the filed representation with information which the device has obtained from light scanned from the retina and detected during an actual scanning movement.

12. Device or method according to one of the preceding claims,

characterized in that, by means of a surface, which has a predefined geometrical shape and can be positioned in front of the eye, light can be projected into the eye by a projection system, and in that the geometrical shape of the surface is used for determining the relative position of at least one characteristic area of the retina with respect to the optical detector and/or projection system.